



Location

Carl-Cranz-Gesellschaft
Argelsrieder Feld 22, bldg. TE 03,
D-82234 Wessling-Oberpfaffenhofen

Participants will receive details to the seminar location as well as a list of nearby accommodations with the confirmation of registration. Please note that the accommodation is not included, and participants are asked to make their own hotel accommodation.

Fee

EUR 1.375,--
CCG is a non-profit organisation, exempt from value-added tax in Germany. For foreign seminar locations the local tax regulations are applicable. Members of CCG receive a discount of 10 %. Student discounts are available on request. Discounts cannot be combined.

Invoice is to be paid within 14 days of invoice issue date by direct deposit only.

Registration

Please register up to 2 weeks before the seminar via E-Mail anmelden@ccg-ev.de or online at www.ccg-ev.de
You will receive a confirmation E-Mail with further information.

Further Information

For more information about our organization please contact:
Carl-Cranz-Gesellschaft e.V.
Argelsrieder Feld 22
D-82234 Wessling-Oberpfaffenhofen
Tel. +49 (0) 8153 / 88 11 98 -12
E-Mail ccg@ccg-ev.de / Internet www.ccg-ev.de

For more information on the content of the seminar please contact

Prof. Dr. Daniel W. O'Hagan
Fraunhofer FHR, D-53343 Wachtberg-Werthhoven
E-Mail: daniel.ohagan@fhr.fraunhofer.de

Substitutions and Cancellations

Substitutions of participants may be made at any time. Cancellation of an accepted registration later than 14 days prior to the start of the seminar is subject to a 25% cancellation fee. No shows will be billed for the entire seminar fee.

CCG reserves the right to cancel a course up to 14 days before the course's beginning in case of low number of participants or for other significant reasons. Furthermore, CCG reserves the right, against the announcement in the programme, to possibly replace at short notice a lecturer and also the lecturer's topic. Any claims for damages shall be excluded.

Focus

Passive Radar (PR) utilises pre-existing transmitter infrastructure to illuminate targets. Examples of „Illuminators of Opportunity“ (IoO) include FM radio, terrestrial digital TV (DVB-T/2), LTE, and Satellite-based illuminators. Passive Radar is a maturing technology, with several products available on the market. PR is still, nevertheless, an emerging technology owing to the fact that new and emerging potential Illuminators are coming online – such as the use of emerging satellite constellations like Starlink as well as 5G based transmissions. This 2-day course equips participants with a very functional and systems-level understanding of Passive Radar that will be invaluable to their research- and project-work.

Who Should Attend

This course will be of relevance to all researchers, scientists and engineers involved either directly or indirectly with Passive Radar technology. **Passive Radar “know how” is highly relevant for numerous current and future national and international projects.** In the event of Passive Radar deployment in future conflicts, then this course will also be of immense interest to colleagues in the EW community.

Lecturer

Daniel W. O'Hagan	Prof. Dr.	Fraunhofer Institute for High Frequency Physics and Radar Techniques FHR, Wachtberg-Werthhoven
-------------------	-----------	--

Seminar SE 1.17

Introduction to Passive Radar

April 24 – 25, 2024
Oberpfaffenhofen near Munich

Scientific Coordination

Prof. Dr. Daniel W. O'Hagan
Fraunhofer FHR, Wachtberg-Werthhoven



Seminar Outline

Wednesday, April 24, 2024
08.30 – 17.00

08.30 – 08.45 CCG	Introduction
08.45 – 10.00 D. W. O'Hagan	Historical Context The course will begin by placing Passive Radar in historical context. This context is important as it sheds light on why (not only how) Passive Radar is used. This seminar is specifically designed to equip participants with a very functional and systems-level understanding of Passive Radar. Past participants have found the seminar invaluable to their research- and project-work
10.15 – 12.00 D. W. O'Hagan	Introduction to Passive Radar & Essential Theory This lecture imparts the advantages and challenges associated with Passive Radar – in the context of other potentially viable solutions. Here we will study the fundamental theory of Passive Radar that is essential for a full understanding of the subsequent lectures
13.00 – 15.00 D. W. O'Hagan	Passive Radar Coverage This lecture will consider the various parameters associated with creating a Passive Radar coverage map (mission planning). SNR, bistatic RCS – investigating the claim that Passive Radar has counter-stealth properties, direct-signal interference, integration-gain, etc., will be studied in this section. Worked examples will be performed to reinforce important points
15.15 – 17.00 D. W. O'Hagan	Characterisation of Illuminators of Opportunity This lecture will analyse the salient characteristics of potential Illuminators of Opportunity (IoO) for Passive Radar applications. The number and diversity of IoOs is increasing and careful thought has to be given to the ultimate design goals of a Passive Radar system. Emerging illuminators, such as Starlink, will be discussed in this lecture as well as potential use-cases

Thursday, April 25, 2024
08.30 – 17.00

08.30 – 10.00 D. W. O'Hagan	Who develops and uses Passive Radar? As a means to illuminate Passive Radar technology, this lecture will focus on the organisations that develop and those that use Passive Radar. We will study real-world systems and application areas. Furthermore, an overview will be provided on the numerous NATO scientific panels dedicated to the advancement of Passive Radar technology. The case-studies in this lecture will equip participants with an overview of the state-of-the-art vis-à-vis Passive Radar, as well as likely future trends for the technology
10.15 – 12.00 D. W. O'Hagan	Passive Radar Design I This part of the seminar will be interactive. The participants will be provided with a scenario that requires surveillance coverage. Owing to certain factors that will be explained, participants and lecturer will work together to investigate whether, and to what extent, a Passive Radar might fulfill the required specifications. This is a fun and interactive element of the seminar that greatly adds to the learning outcome. Bring a calculator!
13.00 – 14.30 D. W. O'Hagan	Passive Radar Design II This part of the lecture continues the design case-study. The proposed solution will be evaluated by participants and then assessed the determine its ability to fulfill the original objectives. This interactive design exercise is intended to provide participants with insight as to why and how Passive Radar is used for certain surveillance applications. The design exercise will consolidate the preceding lecture content for richer learning outcomes
15.00 – 17.00 D. W. O'Hagan	Advanced Topics: Passive Radar Countermeasures The seminar concludes with a lecture on the advanced topic Passive Radar Countermeasures, which is a topic of increasing relevance

Material

Each attendant will be provided with detailed course material in English.

Language

English